REMARKS

Upon entry of the present Amendment the claims under consideration are 1, 5, 7, 8, and 10-36. Claim 5 has been amended to make the preamble clearly state that a direct answer is given by the present invention. Claim 19 is amended to provide proper antecedent basis for the complained of term. Claim 26 is amended to correct a typographical error in the preamble. Claim 29 is cancelled hereby. Claim 33 is amended to correct the dependency for proper antecedent basis from Claim 31. The Detailed Action of 31 December 2003 will be addressed with reference to the headings and any paragraph numbers therein.

Information Disclosure Statement

It is the contention of the Detailed Action that Applicants submitted a nonconforming Information Disclosure Statement when submitting definitional material by Appendices A and B with their Amendment of 17 October 2003. The Detailed Action indicates that this definitional material has been placed in the file but not considered. Applicants respectfully request reconsideration of this failure to consider the definitional material contained therein.

Appendices A and B were submitted by the Applicants as proof of the meaning of the known term of art "data warehouse" at the time of filing the application. The Appendices were not submitted as an Information Disclosure Statement listing "material art" as defined under the 37 CFR § 1.56. Applicant Ophir Frieder and applicant's undersigned attorney discussed this definitional issue with the Examiner in the Interview of 03 September 2003 (the summary of which is of record). Applicants direct the Examiner to MPEP § 609(III)C(3) as follows:

C (3) Documents Submitted As Part of Applicant's Reply to Office Action

Occasionally, documents are submitted and relied on by an applicant when replying to an Office action. These documents may be relied on by an applicant, for example, to show that an element recited in the claim is operative or that a term used in the claim has a

recognized meaning in the art. Documents may be in any form but are typically in the form of an affidavit, declaration, patent, or printed publication.

To the extent that a document is submitted as evidence directed to an issue of patentability raised in an Office action, and the evidence is timely presented, applicant need not satisfy the requirements of 37 CFR 1.97 and 37 CFR 1.98 in order to have the examiner consider the information contained in the document relied on by applicant. In other words, compliance with the information disclosure rules is not a threshold requirement to have information considered when submitted by applicant to support an argument being made in a reply to an Office action.

At the same time, the document supplied and relied on by applicant as evidence need not be processed as an item of information that was cited in an information disclosure statement. The record should reflect whether the evidence was considered, but listing on a form (e.g., PTO-892, PTO-1449, or PTO/SB/08A and 08B) and appropriate marking of the form by the examiner is not required.

Thus, to not consider evidence of the commonly understood meaning of a term of art used in the Claims under the mistaken belief that definitional material is a nonconforming Information Disclosure Statement is clearly an error on the part of the Office. Applicants therefore request withdrawal of finality of the Action of 31 December 2003, and consideration of the Appendices and a subsequent action on the merits of the Claims as properly understood in the context of the art.

As noted in Applicants previous Amendment A, it is important in understanding the present invention to grasp the meaning of the claim term: a "physical data warehouse" as understood in the art at the time of filing of the application.

A "data warehouse" as discussed in the present invention at pages 5-6 of the specification, is defined in *Whatis?Com's Encyclopedia of Technology Terms,* as a: "central repository for all or significant parts of the data that an enterprise's various business systems collect. ... Data from various online transaction processing (OLTP) applications and other sources is selectively extracted and organized on the data warehouse database for use by analytical applications and user queries. Data warehousing emphasizes the capture of data from diverse sources for useful analysis and access, but does not generally start from the

point-of-view of the end user or knowledge worker who may need access to specialized, sometimes local databases."

In short, a data warehouse is a repository of cleaned up, extracted, transformed, and loaded subset of data. It often has a diversity of data types within itself, included structured and unstructured data sources, integrated into one system. It is not a traditional Information Retrieval source, such as those described and relied upon in the cited art. Such traditional sources typically store data in an organized manner consistent with the (one) data type that they store. For example, text repositories focus on storage structures for text; whereas, structured data repositories often rely on relational database technology.

Applicants respectfully request that the Examiner acknowledge and apply the commonly understood meaning of the term of art "physical data warehouse" as used consistently in the specification and in the Claims to denote a particular type of data structure. Upon application of the proper meanings of the claim terms it is believed the present invention will be seen by the Office to define over the prior art.

By way of general discussion, it is noted that to have a properly functioning data retrieval system, it is basic that one must have a properly structured query for the particular database one wants to retrieve data from. Query structure and database structure are not independent from each other. Further, database structures and query structures in themselves are not interchangeable entities which can be substituted at will in the manner of a nail and a screw for fastening two pieces of wood. It will be appreciated that in the case of the present invention, the person having ordinary skill in the art would recognize the need for a specific structure of natural language query to derive data with the proper attributes to obtain the direct answer from the data structures of the data warehouse or unstructured databases.

Claim Rejections 35 USC § 112

Claim 18 [sic, 19] is rejected for having insufficient antecedent basis for the term "the most likely" in limitation a)ii). Claim 18 has been amended to recite the "direct" answer, which has proper antecedent basis. It is therefore respectfully requested that the rejection be withdrawn.

Claim Rejections 35 USC § 103

Per paragraph 4 of the Detailed Action, Claim 1 stands rejected as obvious over Hobbs, US Patent 6,523,022 (hereinafter "Hobbs") in view of Paik et al., US Patent 6,076,088 (hereinafter "Paik"). It is generally noted that while Hobbs makes passing reference to the use of structured data, Hobbs details no actual use of structured queries acting upon a physical data warehouse repository of cleaned up, extracted, transformed, and loaded subsets of data. Paik, while detailing a Natural Language Query structure, teaches no use of structured queries upon a physical data warehouse within its teachings either. Thus, neither of the references suggests the need for combining a natural language query structure with the searching of structured and unstructured databases to practice the combination of techniques as set forth in Claim 1: namely:

1. A method for digital data gathering in response to a query, comprising:

conducting searching of a physical data warehouse containing structured and unstructured data sources,

preselecting data sources most likely to contain a valid response to the query before submitting the query to the data sources, and

combining results from said structured and unstructured data source searches and sorting the results to provide a direct answer.

Further, as regards the last limitation of Claim 1, Applicants submit that Hobbs merely puts its search results on the screen together rather than combining and selecting a best answer from the results in ordinary information retrieval fashion (see Fig. 10). Paik, cited by

the Detailed Action as providing a direct answer, does not teach the utilization of structured and unstructured data sources in its searches and hence cannot combine the results of such searches. Thus, neither reference, singly or in combination, suggests the need for combining the references to achieve the presently claimed invention. Only with the use of improper hindsight utilizing the present invention as a template would the person having ordinary skill in the art be motivated to combine the two references. Because Hobbs is not properly combinable with the disparate information retrieval system of Paik and the references do not present a *prima facie* case of obviousness against the present invention, the present rejection must be withdrawn.

Per paragraph 5 of the Detailed Action Claims 5, 7-8, 10-13, 19-22 and 27-28 stand rejected as obvious over Redfern, US Patent 6,078,314 (hereinafter "Redfern") in view of Hobbs and further in view of Paik.

It is the contention of the Detailed Action that Redfern accepts input of an natural language query and identifies the relevant concepts of the natural language query and assembles them into a query equivalent to the present invention. Applicants respectfully disagree. Referring to Redfern's col. 4, line 59, describing Table 2, at col. 17, there is listed a table of "throw out" words (see also Fig 2, step 108 and Fig. 3, step 108 which includes step 204) which are eliminated from the search query. These "throw out" words include the who, what, when, where, why, and how (W-H) words that are essential to the formulation of a natural language query which will allow the determination of a most likely answer.

As required by Claim 5, limitations b), c), and g), i.e.,:

b) identifying the relevant concepts of the natural language question;

c) assembling the relevant concepts of the natural language question into a query;

g) integrating the results of the first and second searches and selecting a direct answer to the natural language question;

or Claim 19 limitations b), c), and h) i.e.,:

b) a parser module for identifying the relevant concepts of the natural language question, assembling the relevant concepts of the natural language question into a query and eliminating irrelevant words of the natural language question from use in the query;

c) an unstructured data source manager for managing query input to, and accepting results from, unstructured data sources outside of a physical data warehouse;

h) a results manager module for accepting the results of the structured and unstructured data source searches and integrating the results of the searches and selecting the direct answer and forwarding the direct answer to the answer module

or independent Claim 27 limitations e), f), and l), i.e.,:

e) a parser module for identifying the relevant concepts of the natural language question, assembling the relevant concepts of the natural language question into primary query tokens and eliminating irrelevant words of the natural language question from use as primary query tokens, and for accepting results from a query expander module;

f) a query expander module for accepting the primary query, determining analogous terms to the primary query tokens, and forwarding the primary query tokens and the analogous terms to an unstructured data source manager, and assembling enhanced query tokens from the results;

l) a results manager module for accepting the results of the structured and unstructured data source searches for each enhanced query token and integrating the results of the searches and selecting a direct answer to the natural language question and forwarding the direct answer to the answer module;

the natural language module of the present invention must be read in the context of the physical data warehouse it seeks to extract information from, and further must assemble the query in a format of suitable attributes for obtaining a direct answer from that physical data warehouse.

However, Redfern teaches the discarding of the relevant concepts of a query (W-H words) which should be included according to Paik (see, e.g., Paik at col. 4, line 6) to derive a direct answer. Therefore, the teachings of Redfern are further inconsistent with the natural language query teachings of Paik and the references are not properly combinable to suggest the present invention. To no less of an extent, the teachings of Redfern are inconsistent with the Claims of the present invention.

Further, Redfern does not teach the searching of any physical data warehouse. The Examiner's reference to Redfern teaching a physical data warehouse at col. 9, lines 15-25 is inaccurate. LEXIS is a text collection database and not a physical data warehouse as understood in the art. Hence, of course, Redfern uses exclusively text retrieval terms in describing its operations. The fact that Hobbs (col. 2, line 29) mistakenly (or antiquatedly) calls LEXIS a data warehouse does not change the fact that the teachings of Redfern are directed exclusively to information retrieval systems. Applicants, per the above discussion, have provided probative evidence of the commonly accepted definition of the term of art "physical data warehouse" at the time of filing of the application.

Applicants have further submitted a declaration by Dr. Ophir Frieder, a co-inventor of the present invention, with respect to the commonly understood contemporaneous meaning of that claim term. Thus, the inaccurate or outdated definition recited by Hobbs cannot render the present invention obvious when the true meaning of a physical data warehouse is acknowledged.

Further specifically with respect to independent claims 19 and 27, the Detailed Action characterizes Redfern as disclosing an intranet mediator. Applicants respectfully disagree. Redfern does not discuss an intranet mediator and limits it discussion only to public network searches using a plurality of search engines (e.g., see Background and Summary of Redfern). Further, Applicants see no suggestion within the cited references for the claimed combination of a structured data manager 33 (Fig. 1), an unstructured data manager 23 (Fig. 1) and the integration of those functions by a results manager module 51 (Fig. 1) as required

by the present Claims.

Because the Redfern, Paik, and Hobbs references are so disparate, and because no reference teaches the basic framework of operating on a physical data warehouse with a natural language query to derive a direct answer, Applicants believe that the proposed combination of references is an untenable *post hoc* rationalization to meet the separate limitations of the claims rather than addressing the invention as a whole. Thus, the references cannot present a *prima facie* case of obviousness against the present invention. Accordingly, the present rejections must be withdrawn.

Per paragraph 6 of the Detailed Action Claim 14 stands rejected as obvious over Redfern and Hobbs in view of Paik and further in view of Ranger US Patent 6301584 (hereinafter "Ranger"). Ranger is said to be combinable with the previous references to teach the accumulating of search results for a specified time before displaying the direct answer. Applicants reference their above discussion with respect to the inapplicability of the cited combination of references. It is noted that Ranger is also not directed to searching a physical data warehouse with a natural language query to obtain a direct answer and therefore gives no suggestion of combinability with the other references to teach the present invention. Claim 14, as dependent from and incorporating all limitations of independent Claim 5, is further believed to be allowable over the cited combination references.

Per paragraph 7 of the Detailed Action Claims 15 and 23 stand rejected as obvious over Redfern and Hobbs in view of Paik and further in view of Kraft et al., US Patent 6,633,867 (hereinafter "Kraft"). Applicants reference their above discussion with respect to the inapplicability of the cited combination of references. It is noted that Kraft is also not directed to searching a physical data warehouse with a natural language query to obtain a direct answer and therefore gives no suggestion of combinability with the other references to teach the present invention. Claims 15 and 23, as dependent from and incorporating all

limitations of independent Claims 5 and 19, are further believed to be allowable over the cited combination references.

Per paragraph 8 of the Detailed Action Claims 16-18 and 24-26 stand rejected as obvious over Redfern and Hobbs in view of Paik and Kraft and further in view of Liddy et al., US Patent 6,304,864 (hereinafter "Liddy"). Applicants reference their above discussion with respect to the inapplicability of the cited combination of references. As discussed in Amendment A, Liddy appears to be a system for evolving a search agent's intelligence through the ranking of additionally obtained results within the field of an information retrieval system for unstructured systems such as the World Wide Web. Thus, Liddy does not appear to be properly combinable with the disparate information retrieval systems of the other cited references. Claims 16-18 and 24-26, as dependent from and incorporating all limitations of independent Claims 5 and 19, are further believed to be allowable over the cited combination references.

Per paragraph 9 of the Detailed Action Claim 29 stands rejected as obvious over Garrecht et al., US Patent 6,567,812 (hereinafter "Garrecht") in view of Syeda-Mahmood, US Patent 5,920,856 (hereinafter Syeda-Mahmood). Claim 29 has been cancelled thereby obviating the rejection.

Per paragraph 10 of the Detailed Action Claim 30 stands rejected as obvious over Syeda-Mahmood in view of Hobbs 5,987,454 (hereinafter "Hobbs2"). Claim 30 specifically recites the conducting of a search of at least one data source within a physical data warehouse, and the sorting of the results of the at least one data source search and providing a direct answer to the query. Syeda-Mahmood appears to disclose a meta-server for multiple websites, an accumulation of which would not be considered a data warehouse as it is known in the art (see discussion above). Syeda-Mahmood does not discuss an intranet

mediator for a physical data warehouse or the provision of a direct answer as defined in the present invention. The Detailed Action notes that Hobbs2 defines a database that contains more information about one or more databases as a data warehouse. This is an inaccurate definition of a standard term of art as understood at the time of filing the present application. As discussed above, the inaccurate (or antiquated) definition by another cannot render the present invention obvious when the true meaning of a physical data warehouse is acknowledged. Applicants have provided contemporaneous and accurate definitions for the terms of art within the claims.

The Detailed Action further cites Hobbs 2 at col. 16, lines 5-10 for the proposition that: "a database that contains more information about one or more databases is a data warehouse (sic)." Applicants see no teaching regarding data warehouses at the cited column and lines. Clarification is requested.

Per paragraph 11 of the Detailed Action Claims 33 and 35 stand rejected as obvious over Syeda-Mahmood in view of Hobbs2 and Garrecht. Claims 33 and 35 specifically recite combining and sorting the results of an unstructured data source search with the results of a physical data warehouse search and the selection of the direct answer being weighted to the search results from the data warehouse, respectively. Applicants refer to their discussion of the inapplicability of Syeda-Mahmood and Hobbs2 with respect to Claim 30 above. Garrecht also does not provide for the searching of a physical data warehouse as discussed above. Garrecht is cited by the Detailed Action as teaching the combining and sorting of results of a physical data warehouse search and an unstructured data source search as at columns 16 and 17. However, the sorting of Claim 33 must be read in the context of Claim 30 wherein the sorting is used to provide a direct answer. As noted by Garrecht, its search results are merely: " ordered in only one manner, and nothing is done to manage the complexity of all of these results." (col. 17, line 43). With respect to Claim 35,

no weighting of the answer towards the results of the physical data warehouse search is evidenced in Garrecht.

Per paragraph 12 of the Detailed Action Claim 31 stands rejected as obvious over Syeda-Mahmood in view of Hobbs2 and Tsourikov, US Application 2002/0116176 (hereinafter "Tsourikov"). It is the contention of the Detailed Action that Tsourikov teaches the conducting of a search of unstructured data sources outside of the physical data warehouse if a direct answer is not selected from the physical data warehouse search as set forth in Claim 31. Applicants refer to their discussion of the inapplicability of Syeda-Mahmood and Hobbs2 with respect to Claim 30 above. It is noted that Tsourikov is also not directed to searching a physical data warehouse to provide a direct answer and therefore gives no suggestion of combinability with the other references to teach the present invention.

Per paragraph 13 of the Detailed Action Claim 32 stands rejected as obvious over Hobbs and Paik (with respect to Claim 1)and further in view of Tsourikov. It is the contention of the Detailed Action that Tsourikov teaches the conducting of a search of unstructured data sources outside of the physical data warehouse if a direct answer is not selected from the physical data warehouse search as set forth in Claim 32. Applicants refer to their discussion of the inapplicability of Hobbs and Paik with respect to Claim 1 above. It is noted that Tsourikov is also not directed to searching a physical data warehouse to provide a direct answer and therefore gives no suggestion of combinability with the other references to teach the present invention.

Per paragraph 14 of the Detailed Action Claims 34 and 36 stand rejected as obvious over Hobbs and Paik (with respect to Claim 1) and further in view of Redfern. It is the contention of the Detailed Action that Redfern teaches the conducting of a search of unstructured data sources outside of the physical data warehouse if a direct answer is not

selected from the physical data warehouse search as set forth in Claim 32. Applicants refer to their discussion of the inapplicability of Hobbs, Paik and Redfern with respect to the searching of physical data warehouses as per Claims 1 and 5 above. It is further believed that this combination of references provides no support for the suggestion of combinability to achieve the inventions of Claims 34 and 36 with respect to the combining of search results from a physical data warehouse and an unstructured database.

Request for Withdrawal of Finality of Action

The Examiner's Interview Summary of 09 October 2003 indicated that further searching will be required due to the distinctions of the accepted definition of the term of art "data warehouse" over the term of art "federated database" which the Examiner originally mistakenly equated to the claim term "physical data warehouse." Because Applicants had clearly claimed both of the searching of a data warehouse and the provision of a direct answer in several original Claims, no amended claims should have necessitated a new search or a final action by the Office. Applicants, by way of illustration, further point to Claim 27, which added two clarifying phrases (i.e.,: 1) clarifying that the unstructured data sources were outside the data warehouse, and 2) changing "most likely answer" to its synonym "direct answer") to a forty one line claim in Amendment A. Applicants do not believe that these minor amendments could have necessitated the new grounds of rejection. For the foregoing reasons, Applicants respectfully request that the finality of the Office Action of 31 December 2004 be withdrawn.

Further, per the above discussion, Applicants request withdrawal of the finality of the Office Action of 31 December 2004 in order that the true meaning, contemporaneous with the filing of the application, of the claim term "data warehouse" be considered in evaluating the present claims.

REQUEST FOR TELEPHONIC INTERVIEW

Clearly, there are differences between the present invention and the cited references involving patentable subject matter. These differences are now believed by the

Applicants to be properly defined in the present Claims. The Examiner is requested to call Applicants' attorney (per the provisions of M.P.E.P. § 713) to discuss any further problems or suggest solutions in defining the present invention in order to expedite the case towards allowance before issuing a final Office Action.

Conclusion

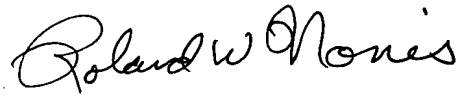
Applicants respectfully submit that the present Claims patentably define over the art of record.

For all the foregoing reasons, the Claims as presently amended are believed to be allowable over the art of record. A notice to that effect is earnestly solicited.

The Examiner is invited to call Applicant's undersigned attorney should the Examiner feel that any issues remain after entry of the present amendment.

Favorable consideration is requested.

Respectfully submitted,



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